

III. REMARKS

1. Claims 1-22, 24, and 25 remain in the application. Claim 23 has been cancelled without prejudice. Claims 1, 4, 11, 14, and 21 have been amended.
2. The After Final Amendment filed on 18 October 2006 was not entered.
3. Applicants reiterate that the support for the amendments can be found on several places in the original application. For example, page 13, line 32 through page 14, line 24 state the following:

On the other hand, because it is known that the wireless communication device MS moved from the coverage area of one base station BS to the coverage area of a second base station BS', it is possible to use at this stage for example some other positioning data calculated on the basis of these two base stations, preferably the midpoint between these two base stations BS, BS', as the default position of the wireless communication device MS. In this case, it is very probable that in connection with a handover the wireless communication device MS is positioned closer to this midpoint than to either of the base stations BS, BS'. In this manner it is possible in some situations to faster achieve the wished positioning precision in the positioning receiver MS.

In some mobile communication systems, such as systems based on the CDMA, the wireless communication device MS can simultaneously communicate with more than one base station. Thus, as the default position of the wireless communication device MS can be used for example the positioning data calculated according to the position of those base stations that communicate simultaneously with the wireless communication device MS. For example, if three base stations are used in the communication, e.g. the geometric midpoint, which can be used as the default position, is calculated on the basis of the positioning data of these three base stations. It is obvious that the motion data of the wireless communication device MS can also be used in the definition of the default position, that is, in accordance with the previously performed positionings the direction of movement of the wireless communication device MS is estimated and, on the basis of this, attempt is made to select the base station positioned close to the direction of movement of the wireless communication device MS, e.g. the wireless communication device is moving towards one of these base stations. (emphasis added)

Further, the end of page 19 states:

When a plurality of wireless communication devices having a positioning receiver perform positioning within the coverage area of a base station and transmit the information on their position to the data base server it is thus possible, on the basis of a set of data, to calculate e.g. a mean value, a geometric center or the like, which is sent as the reference point to the wireless communication device MS. (emphasis added)

4. Claims 1, 4, 11, 14, and 21 have been amended to overcome the 35 USC 112, first and second paragraph rejections.

5. Applicants appreciate the Examiner's suggestion for overcoming the 35 USC 112, second paragraph rejections of claims 4 and 14. Applicants have amended these claims to remove the portions referring to selecting the default position as a position of the certain one of the base stations.

6. Applicants appreciate the Examiner's suggestion to incorporate the features of claim 23 into the independent claims to overcome the art rejections. Accordingly, Applicants have amended claims 1, 11, and 21 to include the features of claim 23. Applicants respectfully submit that all the claims are allowable.

7. Regarding the clarity of averaging a plurality of positions, Applicants wish to point out that page 19 of the present application discloses that it is possible to calculate a mean value, a geometric center, or the like on the basis of a set of data. "Averaging transmitted position data" and the "mean value of a geometric center" would both provide a position that would be near to the true center of a set of three points. That is, both processes (or any form of reduction process) would be better than just using one of the reference points that is known not to be the current location. For simplicity in the device's hardware or software, the average is more often used since it is simple and would place the user in the center or close to it. Theoretically, the average might be a better guess even if it is not an exact location since it is used as the seed for the default starting location. However, a closer and more mathematically correct option may be calculating a triangle center or a triangle centroid as described in the links: <http://mathworld.wolfram.com/TriangleCenter.html> and <http://mathworld.wolfram.com/TriangleCentroid.html>, reproduced and attached to this response.

Thus, calculating the average provides a location that is or is near the true center. But neither the true center nor the location near the true center are necessarily the actual location of the terminal. The average is simply a way of obtaining a better starting position. The point is that having the pure mathematical location is no better in this instance of resolving a better starting location since it will on most occasions not be the actual current location.

8. Applicants respectfully submit that claims 1-25 are patentable over the combination of Bloebaum et al. (US 6,433,735, "Bloebaum") and Krasner (US 6,133,874) and any one of Freeny (US 4,112,421, "Freeny '421"), Freeny (US 4,209,787, "Freeny '787") or Konneker (US 4,864,313) under 35 USC 103(a).

The combination of Bloebaum, Krasner, and any one of Freeny '421, Freeny '787, or Konneker fails to disclose or suggest calculating the default position of the wireless communication device from a geometric midpoint of the more than one reference points located in the vicinity of the wireless communication device, as essentially recited by claims 1, 11, and 21.

The Bloebaum and Krasner references were presented in previous Office Actions. Bloebaum and Krasner disclose the use of cell identity as a default position of the wireless communication device. However, neither Bloebaum nor Krasner disclose or suggest calculating the default position of the wireless communication device from a geometric midpoint of the more than one reference points located in the vicinity of the wireless communication device.

Freeny '421 discloses an automatic vehicle monitoring method and apparatus including a plurality of signpost units. Each signpost unit is located in accordance with a predetermined unique signpost configuration, wherein the location of each signpost is known. A vehicle includes a receiver for receiving signals transmitted by signposts and a transmitter for transmitting data to a base station. Each signpost comprises a unique signpost code which the signpost transmits. The vehicle receives signals from one or more signposts. In a near-field one signal is stronger than a threshold wherein that signpost location is used as a default location of the vehicle. In a far-field the vehicle

may receive signals from two (or more) signposts but signal strengths are less than the threshold. The vehicle (or the base station) can then determine that the vehicle is located in the far-field of both signposts i.e. the location is in an overlapping area of far-fields of the signposts in question. However, there is nothing in Freeny '421 related to calculating the default position of the wireless communication device from a geometric midpoint of the more than one reference points located in the vicinity of the wireless communication device.

Freeny '787 discloses a method for monitoring the location of monitored objects within a monitored area. The monitored area is equipped with signposts at intersections of first and second coordinate grid lines. Each signpost unit transmits a signpost code comprising information on the first and second coordinate grid lines. Each signpost unit is positioned within the monitored area such that a portion of the far-field region of each signpost unit overlaps a portion of a near-field region of at least one other signpost unit, thus forming a transition area, and such that a portion of the far-field region of each signpost unit overlaps a portion of the far-field region of at least one other signpost unit thus forming an overlapping area. Therefore, the vehicle unit can use the signpost codes and signal strength measurements to determine whether the vehicle is near a signpost, in the transition area, or in the overlapping area. In contradistinction to the present claims, there is no disclosure or suggestion in Freeny '787 related to calculating the default position of the wireless communication device from a geometric midpoint of the more than one reference points located in the vicinity of the wireless communication device.

Konneker discloses a system and a method of locating mobile objects in a monitored area. The monitored area is divided into subareas. The system comprises a plurality of signposts each transmitting a unique code. Many signposts are positioned in each subarea. Each signpost transmit a vote signal having encoded therein a subarea code identifying the subarea the signpost is positioned in. The mobile object receives vote signals and detects the subarea codes encoded therein. The location of the mobile object is determined to be the one of these subareas having a maximum count of signposts that are positioned in that subarea and that are in range of the mobile object.


In other words, the mobile object can receive signals from signposts which are positioned to different subareas. Therefore, the mobile object compares the number of each received subarea code and selects that subarea code which occurs in the majority of the received subarea codes. However, Konneker fails to disclose or suggest calculating the default position of the wireless communication device from a geometric midpoint of the more than one reference points located in the vicinity of the wireless communication device.

Therefore, independent claims 1, 11, and 21 and dependent claims 2-10, 12-20, and 22-25 are patentable over the combination of Bloebaum, Kranser, and any one of Freeny '421, Freeny '787, or Konneker.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,



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